

### REMARKS

This communication is a full and timely response to the final rejection dated May 27, 2009. Claims 1-10 remain pending. By this communication, claims 1-10 are amended. Support for the amended subject matter can be found, for example, at paragraph [0012] of Applicants disclosure.

In numbered paragraph 2 on page 2 of the Office Action, claims 1-10 stand rejected under 35 U.S.C. §103(a) for alleged unpatentability over *Barber et al.* (U.S. Patent No. 6,101,371) in view of *Taussig et al.* (U.S. Patent No. 6,181,050).

Applicants respectfully traverse this rejection.

Figures 1-5c illustrates exemplary embodiments in which a microelectro-mechanical system (MEMS) actuator tunes a device by changing the RF transfer function of a signal path of the device. The signal path 102 can be configured using plural segmented, conductive legs 104a-104f, wherein coupling coefficients of the cascaded legs are altered using an actuator. A second set of conductors 105a-105c are formed in proximity to the fixed point conductors 104a-104f of the signal path to alter the coupling coefficients. By selectively, an dynamically, moving any one or more of the conductors 105a-105c among any number of available positions, the impedance of the signal path 102 can be altered, thereby altering the transfer function of the signal path and changing a response of the signal path.

Applicants' claims broadly encompass the foregoing features. For example, independent claim 1 recites:

A method of modifying a radio frequency (RF) response, comprising:  
establishing an RF response in a signal path formed through plural segmented and cascaded conductive legs of a device; and

controlling an actuator, which is formed by a post machining CMOS processing to be moveable, to move at least one of the conductive legs thereby structurally altering the signal path and dynamically changing an impedance of the signal path to alter the RF response.

Similarly, independent claim 7 recites the following:

An apparatus for modifying a radio frequency (RF) response comprising:  
a signal path formed through plural segmented and cascaded conductive legs, the signal path having an RF transfer function; and  
an actuator formed by a post machining CMOS processing to be moveable for tuning the device by structurally moving at least one of the conductive legs to change the signal path and to alter the RF transfer function.

The combination of *Barber* and *Taussig* fails to disclose the features recited in claims 1 and 7 as noted above.

*Barber* discloses a MEMS inductor that includes a conductive loop 104. The first end 106 of the loop 104 depends from a conductive support 110, and a second end 108 of the loop 104 depends from a conductive support 114. The first end 112 of the conductive support 110 is electrically connected to a ground contact 118. The first end 116 of conductive support 114 is electrically connected to signal contact 118. The arrangement guides a relative high-frequency signal toward signal contact 122. See *Barber*, Fig. 1; col. 4, lines 21-42. The loop 1004 comprises a signal turn, and may be configured to include additional turns to provide more inductance. *Id.*, Col. 8, lines 25-36.

*Taussig* discloses an electrostatic MEMS actuator having a rotor 214 of an electrostatic actuator 210 that is suspended parallel to a stator 212 by springs 213. Four rotor electrode arrays 217 are disposed on the surface of rotor 214 facing the surface of stator 212 that has four corresponding sets of stator electrode arrays. Each of the rotor electrode arrays 217 includes eight individual rotor electrode strips.

Each of the stator electrode arrays 211 includes eight individual stator electrode strips. The parallel surfaces of the electrode and stator arrays (211, 217) can be moved relative to each other. The arrays are moved through the generation of electrostatic fields which are generated by patterns of electrodes on the sides of the surfaces that face each other. Id., col. 9, lines 58-67.

Neither *Barber* nor *Taussig*, however, disclose or suggest establishing an RF response in a signal path formed through **plural segmented and cascaded conductive legs of a device**; and controlling an actuator, which is formed by a post machining CMOS processing to be moveable, **to move at least one of the conductive legs thereby structurally altering the signal path and dynamically changing an impedance of the signal path to alter the RF response**, as is similarly recited in claims 1 and 7. Rather *Barber* disclose the use of an inductive loop having one or more turns, and *Taussig* discloses moving the parallel surfaces of electrode arrays relative to each other.

In summary, *Barber* and *Taussig* when applied individually or collectively as alleged by the Examiner, fails to disclose or suggest every feature and/or the combination of features recited in Applicants' claims. As a result, a *prima facie* case of obviousness has not been established.

The courts have established the Office has the initial burden of establishing a **factual basis** to support the legal conclusion of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). For rejections under 35 U.S.C. § 103(a) based upon a combination of prior art elements, in KSR Int'l v. Teleflex Inc., 127 S.Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007), the Supreme Court stated that "a patent composed of several elements is not proved obvious

merely by demonstrating that each of its elements was, independently, known in the prior art." "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some **articulated reasoning with some rational underpinning** to support the legal conclusion of obviousness." In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (emphasis added). For at least the foregoing reasons, withdrawal of the rejections to claims 1 and 7 and their corresponding dependant claims is respectfully requested.

### Conclusion

Based on the foregoing amendments and remarks, Applicants respectfully submit that claims 1-10 are allowable and this application is in condition for allowance. In the event any issues adverse to patentability remain, the Examiner is encouraged to contact Applicants' representative identified below.

Respectfully submitted,

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